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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,773	10/29/2003	Takahiko Kawatani	200209753-02 (1509-393)	5291
22879	7590	10/16/2007	EXAMINER	
HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400			STORM, DONALD L	
		ART UNIT	PAPER NUMBER	
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		10/16/2007		PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/694,773	KAWATANI, TAKAHIKO
	Examiner	Art Unit
	Donald L. Storm	2626

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) Responsive to communication(s) filed on 29 October 2003.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) Claim(s) 1-32 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) _____ is/are rejected.
 7) Claim(s) 1-32 is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 29 October 2003 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) Notice of References Cited (PTO-892)
 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
 3) Information Disclosure Statement(s) (PTO/SB/08)
 Paper No(s)/Mail Date _____

4) Interview Summary (PTO-413)
 Paper No(s)/Mail Date _____
 5) Notice of Informal Patent Application
 6) Other: _____

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-32 would be allowable over the prior art of record if rewritten to overcome any objections or rejections under 35 U.S.C. 112(2), especially as appearing in this Office action. Certain assumptions that make the limitations clear have been considered for the claims, as described next or elsewhere in this Office action.

a. The allowable subject matter of independent claim 1 resides in the whole structure and interaction expressed by the combination of all limitations compared to the prior art of record that includes the common occurrence matrix having rows and columns generated as claimed based on the co-occurrence matrix. No particular reference provides relevant, objective evidence to make the whole structure and interaction of the claimed method obvious by changing the closest prior art of record (Schuetze, Foltz, Manning et al.) to include the generation as claimed of rows and columns of the common matrix as products based on co-occurrence matrices for documents, particularly with document segments (from the documents) to generate the co-occurrence matrices.

- b. Independent claim 2, at least sets forth allowable material similar to claim 1.
- c. Independent claim 3, at least sets forth allowable material similar to claim 1.
- d. Independent claim 4, at least sets forth allowable material similar to claim 1.

Specification

2. The title is objected to because it is not sufficiently descriptive of the invention. A new title is required that is clearly indicative of the invention to which the claims are directed. See MPEP § 606.01. The Examiner suggests that the Applicant consider a title including these elements: "Segment Vector, Co-Occurrence Matrix, and Common Co-Occurrence Matrix for Evaluating Commonality of Documents."

Claim Informalities

3. Claim 1, and by dependency claims 5, 9, 13, 17, 21, 25, and 29, are objected to under 37 CFR 1.75(a) because the meaning of the phrase “the document segment vectors for each of the documents in the document set” (in (b)) needs clarification. Because it was previously recited that the documents segment vectors were for each of the documents segments, not for each of the documents, it may be unclear as to what element this phrase refers. One of ordinary skill in the art may be unsure of whether the recitation of document segment vectors for each of the documents further limits the previously recited vectors to somehow correspond to each document, in addition to corresponding to terms in the document segment. To further timely prosecution and evaluate prior art, the Examiner has interpreted this whole limitation (b) in parallel to limitation (a) as --generating for each of the documents of the document set, a co-occurrence matrix from the document segment vectors--.

4. Claim 1, and by dependency claims 5, 9, 13, 17, 21, 25, and 29, are objected to under 37 CFR 1.75(a) because the meaning of the phrase “such co-occurrence matrices of the respective documents” (in (c)) needs clarification. The phrase “such co-occurrence matrices” is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree by which co-occurrence matrices are such matrices as the plurality comprised of a co-occurrence matrix for each of the documents of the document set, which were recited earlier in the claim, and one of ordinary skill in the art may not be reasonably apprised of the scope of the invention encompassed by “such co-occurrence matrices”. The phrase “the respective documents” is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree by which documents are respective. The plain meaning of “respective” requires some assumptions about what plural elements are to be considered individually. One of ordinary skill in the art would not be reasonably apprised of how to assume the scope of the invention as

encompassed by “respective documents”. To further timely prosecution and evaluate prior art, the Examiner has interpreted this phase as --the co-occurrence matrices--.

5. Claim 2, and by dependency claims 6, 10, 14, 18, 22, 26, and 30, are objected to for the same two reasons as claim 1 because the limitations are recited using obviously similar phrases.

6. Claim 2, and by dependency claims 6, 10, 14, 18, 22, 26, and 30, are objected to under 37 CFR 1.75(a) because the meaning of the phrase “the co-occurrence matrices of the documents” (in (d)) needs clarification. Are these the matrices that were recited earlier as generated *for* (each of) the documents? To further timely prosecution and evaluate prior art, the Examiner has interpreted this phase as --the co-occurrence matrices for the documents--.

7. Claim 2, and by dependency claims 6, 10, 14, 18, 22, 26, and 30, are objected to under 37 CFR 1.75(a) because the meaning of the phrase “or the document segments” (in (d)) needs clarification. It is not clear why this phrase appears in the claim because it is not clear what purpose the phrase serves at its location in the either-or relationship. Because of the either-or relationship, the Examiner has interpreted this phase as --or between the document segments--.

8. Claim 3, and by dependency claims 7, 11, 15, 19; 23, 27, and 31, are objected to for the same two reasons as claim 1 because the limitations are recited using obviously similar phrases.

9. Claim 3, and by dependency claims 7, 11, 15, 19, 23, 27, and 31, are objected to under 37 CFR 1.75(a) because the meaning of the phrase “the co-occurrence matrices of the respective documents” (in (d)) needs clarification. The phrase “the respective documents” is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree by which documents are respective. The plain meaning of “respective” requires some assumptions

about what plural elements are to be considered individually. One of ordinary skill in the art may not be reasonably apprised of how to assume the scope of the invention as encompassed by "respective documents". To further timely prosecution and evaluate prior art, the Examiner has interpreted this phase as --the co-occurrence matrices--.

10. Claim 3, and by dependency claims 7, 11, 15, 19, 23, 27, and 31, are objected to under 37 CFR 1.75(a) because the meaning of the phrase "the corresponding component" (in (e)) needs clarification. The phrase "the corresponding component" is not defined by the claim for components of the common co-occurrence matrix, and one of ordinary skill in the art may not be reasonably apprised of the scope of the invention encompassed by a "corresponding component". To further timely prosecution and evaluate prior art, the Examiner has interpreted this whole limitation as --correcting to become "0" any component of the common co-occurrence matrix of mismatch allowance type that corresponds to a component of the co-occurrence count matrix that has a value less than a predetermined threshold--. Is this close to what the Applicant intended for this subject matter?

11. Claim 3, and by dependency claims 7, 11, 15, 19, 23, 27, and 31, are objected to under 37 CFR 1.75(a) because the meaning of the phrase "the document set commonality of mismatch allowance type" (in (e)) needs clarification. Because the document set commonality was not previously set forth as being of any particular type, especially since it was not set forth as being of mismatch allowance type, it may be unclear as to what element this phrase refers. To further timely prosecution and evaluate prior art, the Examiner has interpreted this phase as --the document set commonality--.

12. Claim 4, and by dependency claims 8, 12, 16, 20, 24, 28, and 32, are objected to for the same two reasons as claim 1 because the limitations are recited using obviously similar phrases.

In addition

In addition, claim 4 is objected to because the meaning of the phrase "such document segment vectors" (in (b)) needs clarification. The phrase "such document segment vectors" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree by which document vectors are such vectors as those vectors in which components corresponding to terms appearing in the documents segment assume a value "1", and the other components assume a value "0", which were recited earlier in the claim, and one of ordinary skill in the art may not be reasonably apprised of the scope of the invention encompassed by "such document segment vectors".

13. Claim 4, and by dependency claims 8, 12, 16, 20, 24, 28, and 32, are objected to under 37 CFR 1.75(a) because the meaning of the phrase "the co-occurrence matrices of the respective documents" (in (d)) needs clarification. The phrase "the respective documents" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree by which documents are respective. The plain meaning of "respective" requires some assumptions about what plural elements are to be considered individually. One of ordinary skill in the art may not be reasonably apprised of how to assume the scope of the invention as encompassed by "respective documents". To further timely prosecution and evaluate prior art, the Examiner has interpreted this phrase as --the co-occurrence matrices--.

14. Claim 4, and by dependency claims 8, 12, 16, 20, 24, 28, and 32, are objected to under 37 CFR 1.75(a) because the meaning of the phrase "the corresponding component" (in (e)) needs clarification. The phrase "the corresponding component" is not defined by the claim for components of the common co-occurrence matrix, and one of ordinary skill in the art may not be

reasonably apprised of the scope of the invention encompassed by a "corresponding component". To further timely prosecution and evaluate prior art, the Examiner has interpreted this whole limitation as --correcting to become "0" any component of the common co-occurrence matrix of mismatch allowance type that corresponds to a component of the co-occurrence count matrix that has a value less than a predetermined threshold--. Is this close to what the Applicant intended for this subject matter?

15. Claim 4, and by dependency claims 8, 12, 16, 20, 24, 28, and 32, are objected to under 37 CFR 1.75(a) because the meaning of the phrase "the co-occurrence matrix of the document" (in (f), two occurrences) needs clarification. Is this the matrix that was recited earlier as generated *for* (each of) the documents? To further timely prosecution and evaluate prior art, the Examiner has interpreted this phase as --the co-occurrence matrix for the document--.

16. Claim 5 is objected to under 37 CFR 1.75(a) because the meaning of the phrase "the occurring terms" (second line) needs clarification. Because no occurring terms were previously recited, it may be unclear as to what element this phrase refers. To further timely prosecution and evaluate prior art, the Examiner has interpreted this phase as --the appearing terms--.

17. Claim 6 is objected to for the same reasons as claim 5 because the limitations are recited using obviously similar phrases.

18. Claim 7 is objected to for the same reasons as claim 5 because the limitations are recited using obviously similar phrases.

19. Claim 8 is objected to for the same reasons as claim 5 because the limitations are recited using obviously similar phrases.

20. Claim 9 is objected to under 37 CFR 1.75(a) because the scope must be interpreted when the symbols making up the claim limitations are not defined in the claim. The symbols “*r*”, “*R*”, and “*S*” should be defined in the claims at least the first time used, if a concise and accurate definition is available. To further timely prosecution and evaluate prior art, the Examiner has used the definitions of these terms that appear in claim 5. The Examiner suggests that having this claim dependent to claim 5 would provide appropriate definitions for this claim.
21. Claim 10 is objected to for the same reasons as claim 9 because the limitations are recited using obviously similar phrases. The Examiner suggests that having this claim dependent to claim 6 would provide appropriate definitions for this claim.
22. Claim 11 is objected to for the same reasons as claim 9 because the limitations are recited using obviously similar phrases. The Examiner suggests that having this claim dependent to claim 7 would provide appropriate definitions for this claim.
23. Claim 12 is objected to for the same reasons as claim 9 because the limitations are recited using obviously similar phrases. The Examiner suggests that having this claim dependent to claim 8 would provide appropriate definitions for this claim.
24. Claim 13 is objected to under 37 CFR 1.75(a) because the meaning of the phrase “the corresponding term in the respective document” (third and fourth lines) needs clarification. Because no one, particular, corresponding term was previously recited, it may be unclear as to which one of the corresponding terms this phrase refers, since (plural) components and terms are recited to correspond in claim 1. According to the Examiner’s assumption for claim 1, the unclear

phrase "the respective documents" was not used during the current review and evaluation of prior art. Therefore, to further timely prosecution and evaluate prior art, the Examiner has interpreted this phase as --each corresponding term--.

25. Claim 14 is objected to for the same reasons as claim 13 because the limitations are recited using obviously similar phrases.

26. Claim 15 is objected to for the same reasons as claim 13 because the limitations are recited using obviously similar phrases.

27. Claim 16 is objected to for the same reasons as claim 13 because the limitations are recited using obviously similar phrases.

28. Claim 21 is objected to for the same reasons as claim 5 because the limitations are recited using obviously similar phrases.

29. Claim 22 is objected to for the same reasons as claim 5 because the limitations are recited using obviously similar phrases.

30. Claim 23 is objected to for the same reasons as claim 5 because the limitations are recited using obviously similar phrases.

31. Claim 24 is objected to for the same reasons as claim 5 because the limitations are recited using obviously similar phrases.

32. Claim 25 is objected to for the same reasons as claim 9 because the limitations are recited using obviously similar phrases. The Examiner suggests that having this claim dependent to claim 21 would provide appropriate definitions for this claim.

33. Claim 26 is objected to for the same reasons as claim 9 because the limitations are recited using obviously similar phrases. The Examiner suggests that having this claim dependent to claim 22 would provide appropriate definitions for this claim.

34. Claim 27 is objected to for the same reasons as claim 9 because the limitations are recited using obviously similar phrases. The Examiner suggests that having this claim dependent to claim 23 would provide appropriate definitions for this claim.

35. Claim 28 is objected to for the same reasons as claim 9 because the limitations are recited using obviously similar phrases. The Examiner suggests that having this claim dependent to claim 24 would provide appropriate definitions for this claim.

36. The Examiner notes, without objection, that the form of the claims does not comply with 37 CFR 1.75(g), which requires that dependent claims be grouped together with the claim or claims to which they refer to the extent practicable. Correction is NOT required. New claims added in compliance with 37 CFR 1.121 that are deemed as not complying with 37 CFR 1.75(g) will not be considered a *bona fide* attempt to provide complete replies to Office communications concerning this application.

Conclusion

37. The following references here made of record are considered pertinent to applicant's disclosure:

Schuetze [US Patent 5,675,819] determines lexical co-occurrence of terms by constructing a vector representation for each term in whole documents and matrix terms as sums from the vectors.

Tukey et al. [US Patent 5,787,422] determines word overlap for documents from a vector representation of sets of words appearing in the documents.

Foltz et al. [US Patent 6,356,864] stores text passages from documents into a vector representation and then into a two-dimensional matrix of frequency of occurrence of terms.

38. Any response to this action may be mailed to:

Mail Stop Amendment

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or faxed to:

(571) 273-8300, (for both formal communications intended for entry and for informal or draft communications, but please label informal fax as "INFORMAL" or "DRAFT")

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Some patent correspondence may be delivered by hand or delivery services, other than the USPS, addressed as follows and brought to U.S. Patent and Trademark Office, Customer Service Window, **Mail Stop Amendment**, Randolph Building, 401 Dulany Street, Alexandria, VA 22314

39. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Donald L. Storm, of Division 2626, whose telephone number is (571) 272-7614. The examiner can normally be reached on weekdays between 7:00 AM and 3:30 PM Eastern Time. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richemond Dorvil can be reached on (571) 272-7602.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Inquiries regarding the status of submissions relating to an application or questions on the Private PAIR system should be directed to the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 571-272-4100 between the hours of 6 a.m. and midnight Monday through Friday EST, or by e-mail at: ebc@uspto.gov. For general information about the PAIR system, see <http://pair-direct.uspto.gov>. If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

October 12, 2007

/Donald L. Storm/

Primary Patent Examiner
Division 2626